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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/663,593	09/18/2000	Raymond Van Roijen	PHN 17,638	4051
24738	7590	08/25/2004	EXAMINER	
PHILIPS ELECTRONICS NORTH AMERICA CORPORATION INTELLECTUAL PROPERTY & STANDARDS 1109 MCKAY DRIVE, M/S-41SJ SAN JOSE, CA 95131			DICKEY, THOMAS L	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/663,593

Applicant(s)

VAN ROIJEN ET AL.

Examiner

Thomas L Dickey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-27 is/are allowed.
- 6) ☒ Claim(s) 16 and 17 is/are rejected.
- 7) ☒ Claim(s) 18-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2000 and 24 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

- 11) ☒ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 09/18/00 and 01/22/01. 6) ☐ Other: _____

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DETAILED ACTION

1. The amendment filed on 05/24/04 has been entered.

Information Disclosure Statement

2. The Information Disclosure Statements filed on 09/18/00 and 01/22/01 have been considered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by **Eklund, Klas H.** (5,146,298).

Eklund discloses a semiconductor structure comprising a substrate 210 of a first (p) conductivity type; a first buried layer 249 of a second (n) conductivity type disposed on the substrate 210; a second buried layer 250 of the first (p) conductivity type disposed on the first buried layer 249, and separated from the substrate 210 by the first buried layer 249; an epitaxial region 211 of the second (n) conductivity type having a bottom

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surface disposed on the second buried layer 250, and further having a top surface; a first deep via 251 or 253 disposed through the epitaxial region 211 such that a first electrical pathway is formed from the top surface of the epitaxial region 211 to the first buried layer 249; a second deep via 241 or 243 disposed through the epitaxial region 211 such that a second electrical pathway is formed from the top surface of the epitaxial region 211 to the second buried layer 250; a contact (drain) region 216 of the second (n) conductivity type disposed in the epitaxial region 211, and a protection region 214 or 234 of the second (n) conductivity type disposed in the epitaxial region 211; wherein the contact (drain) region 216 and the protection region 214 or 234 each have top surfaces that are coplanar with the top surface of the epitaxial region 211 and greater doping concentrations than the epitaxial region 211, and the protection region 214 or 234 is spaced apart from the contact (drain) region 216, and spaced apart from the first 251 or 253 and second 241 or 243 deep vias. Note figure 4, column 6 lines 3-35 and 47-62, and column 7 lines 1-3,10-16, and 20-25 of Eklund.

Response to Arguments

4. Applicant's arguments with respect to claims 16 and 17 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

5. Claims 25-27 are allowed over the references of record because none of these references disclosed or can be combined to yield the claimed invention such as a semiconductor structure, comprising a substrate of a first conductivity type; an epitaxial

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layer of a second conductivity type disposed on the substrate; a drain region of the second conductivity type disposed in the epitaxial layer; a protection region of the second conductivity type disposed in the epitaxial layer, spaced apart from the drain region, a backgate region of the first conductivity type disposed in the epitaxial layer, and spaced apart from both the protection region and the substrate; a source region of the second conductivity type disposed in the backgate region; and a deep via of the first conductivity type disposed in the epitaxial layer; wherein the deep via provides an electrical connection between the backgate region and the substrate, the drain region and the protection region each have a doping concentration that is higher than the doping concentration of the epitaxial layer the said protection region comprises a ring around the drain region, as recited in claim 25.

6. Claims 18-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Eklund 5,146,298, cited above, includes all the limitations of claims 17-19 and 21-27, including the backgate region 212 or 232 and the source region 213 or 233, except the requirement that the protection region comprise a circle around the contact (drain) region.

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Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas L Dickey whose telephone number is 571-272-1913. The examiner can normally be reached on Monday-Thursday 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

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information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TLD
08/04


Minhloan Tran
Primary Examiner
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